SEQUENCE LISTING

<110> Nakayama, Naoki
Wen, Duanzhi
Han, Chun-ya
He, Ching
Yu, Dongyin

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Met Asp Gly Met Lys Tyr Ile Ile Ser
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Lys His Ser Asp Thr Tyr Cys Val Phe Gln Asp Lys Lys Tyr Arg Val
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ggt gag aaa tgg cat ccc tac ctg gaa ccg tat gga ctg gtt tac tgt 318
Gly Glu Lys Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu Val Tyr Cys
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Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys Ser Arg Val
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Arg Cys Pro Ser Leu His Cys Leu Ser Pro Val His Ile Pro His Leu
75 80 85

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Cys Cys Pro Arg Cys Pro Asp Ser Leu Pro Pro Val Asn Asn Lys Val
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acc agc aag tca tgc gaa tac aat gga acc act tac caa cat gga gaa   510
Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln His Gly Glu
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Leu Phe Ile Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro Asn Gln Cys
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Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro Asp Ser Cys
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tgc cga gta tgc aga ggg gat gca gaa tta tcg tgg gaa cat gcg gat   702
Cys Arg Val Cys Arg Gly Asp Ala Glu Leu Ser Trp Glu His Ala Asp
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Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg His Ser Tyr
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Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn Asn Lys His
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aaa cat gga caa gtg tgt gtt tcc aat gga aag acc tac tct cat gga   942
Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr Ser His Gly
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Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile Val Glu Cys Val
                270                 275                 280

cta tgc act tgt aat gtc acc aag caa gaa tgt aag aaa atc cac tgc  1038
Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys Ile His Cys
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ccc aat cga tac ccc tgc aag tat cct caa aaa ata gat gga aag tgc  1086
Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile Asp Gly Lys Cys
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Pro Ala Phe Gly
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Leu Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu
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Asn Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Ser Leu His Cys
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Leu Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Asp
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Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
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Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
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Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp
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Ala Glu Leu Ser Trp Glu His Ala Asp Gly Asp Ile Phe Arg Gln Pro
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Ala Asn Arg Glu Ala Arg His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro
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Pro Pro Asn Arg Gln Ala Gly Gly Leu Pro Arg Phe Pro Gly Ser Arg
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Ser His Arg Gly Ala Val Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile
225                 230                 235                 240

Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val
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Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu
            260                 265                 270

Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
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Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
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Leu Leu Leu Glu Gly Gly Lys Thr Glu Gln Val Lys His Ser Glu Thr
     15                  20                  25

tat tgc atg ttt caa gac aag aag tac aga gtg ggt gag aga tgg cat   266
Tyr Cys Met Phe Gln Asp Lys Lys Tyr Arg Val Gly Glu Arg Trp His
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cct tac ctg gaa cct tat ggg ttg gtt tac tgc gtg aac tgc atc tgc   314
Pro Tyr Leu Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys
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tca gag aat ggg aat gtg ctt tgc agc cga gtc aga tgt cca aat gtt   362
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His Cys Leu Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys
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gaa ggg ctc ttt cag aat cgg caa ccc aat caa tgc acc cag tgc agc   554
Glu Gly Leu Phe Gln Asn Arg Gln Pro Asn Gln Cys Thr Gln Cys Ser
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Cys Ser Glu Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu
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Arg Gly Asp Gly Glu Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe
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gga acc att gtg caa att gtc atc aat aac aaa cac aag cat gga caa   890
Gly Thr Ile Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln
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gtg tgt gtt tcc aat gga aag acc tat tct cat ggc gag tcc tgg cac   938
Val Cys Val Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His
    255                 260                 265

cca aac ctc cgg gca ttt ggc att gtg gag tgt gtg cta tgt act tgt   986
Pro Asn Leu Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys
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ccc tgc aag tat cct caa aaa ata gac gga aag tgc tgc aag gtg tgt   1082
Pro Cys Lys Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys
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cca ggt aaa aaa gca aaa gaa gaa ctt cca ggc caa agc ttt gac aat   1130
Pro Gly Lys Lys Ala Lys Glu Glu Leu Pro Gly Gln Ser Phe Asp Asn
        320                 325                 330

aaa ggc tac ttc tgc ggg gaa gaa acg atg cct gtg tat gag tct gta   1178
Lys Gly Tyr Phe Cys Gly Glu Glu Thr Met Pro Val Tyr Glu Ser Val
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Phe Met Glu Asp Gly Glu Thr Thr Arg Lys Ile Ala Leu Glu Thr Glu
350                 355                 360                 365

aga cca cct cag gta gag gtc cac gtt tgg act att cga aag ggc att   1274
Arg Pro Pro Gln Val Glu Val His Val Trp Thr Ile Arg Lys Gly Ile
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ctc cag cac ttc cat att gag aag atc tcc aag agg atg ttt gag gag   1322
Leu Gln His Phe His Ile Glu Lys Ile Ser Lys Arg Met Phe Glu Glu
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ctt cct cac ttc aag ctg gtg acc aga aca acc ctg agc cag tgg aag   1370
Leu Pro His Phe Lys Leu Val Thr Arg Thr Thr Leu Ser Gln Trp Lys
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atc ttc acc gaa gga gaa gct cag atc agc cag atg tgt tca agt cgt   1418
Ile Phe Thr Glu Gly Glu Ala Gln Ile Ser Gln Met Cys Ser Ser Arg
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gta tgc aga aca gag ctt gaa gat tta gtc aag gtt ttg tac ctg gag   1466
Val Cys Arg Thr Glu Leu Glu Asp Leu Val Lys Val Leu Tyr Leu Glu
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Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn
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Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Asn Val His Cys Leu
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Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp
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Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
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Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu
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Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
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Gly Glu Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro
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Ala Asn Arg Glu Ala Arg His Ser Tyr His Arg Ser His Tyr Asp Pro
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Pro Pro Ser Arg Gln Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg
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Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu
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Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
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Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
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Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Gly Lys
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Lys Ala Lys Glu Glu Leu Pro Gly Gln Ser Phe Asp Asn Lys Gly Tyr
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Phe Cys Gly Glu Glu Thr Met Pro Val Tyr Glu Ser Val Phe Met Glu
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Asp Gly Glu Thr Thr Arg Lys Ile Ala Leu Glu Thr Glu Arg Pro Pro
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Gln Val Glu Val His Val Trp Thr Ile Arg Lys Gly Ile Leu Gln His
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Phe His Ile Glu Lys Ile Ser Lys Arg Met Phe Glu Glu Leu Pro His
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Phe Lys Leu Val Thr Arg Thr Thr Leu Ser Gln Trp Lys Ile Phe Thr
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Glu Gly Glu Ala Gln Ile Ser Gln Met Cys Ser Ser Arg Val Cys Arg
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Val Phe Phe Phe Val Phe Leu Glu Ala Ser Lys Thr Glu Pro Val Lys
                15                  20                  25

cac tca gag aca tat tgc atg ttt caa gac aag aag tat aga gtt ggt   267
His Ser Glu Thr Tyr Cys Met Phe Gln Asp Lys Lys Tyr Arg Val Gly
            30                  35                  40

gag aaa tgg cat ccc tac ctg gaa cca tat gga ctg gtt tac tgt gtg   315
Glu Lys Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu Val Tyr Cys Val
        45                  50                  55

aac tgc atc tgc tca gag aat ggg aat gtg ctt tgc agc cga gtc aga   363
Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys Ser Arg Val Arg
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Cys Pro Thr Leu His Cys Leu Ser Pro Val His Ile Pro His Leu Cys
75                  80                  85                  90

tgc ccc cgt tgc cca gac tcc tta cca ccg atg aac aat aag gtg acc   459
Cys Pro Arg Cys Pro Asp Ser Leu Pro Pro Met Asn Asn Lys Val Thr
                95                  100                 105

agc aag tcc tgc gaa tac aat ggg acc acc tac caa cac gga gag ctc   507
Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln His Gly Glu Leu
            110                 115                 120

ttc ata gct gaa ggg ctc ttt cag aac cgg cag ccc aat cag tgc agt   555
Phe Ile Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro Asn Gln Cys Ser
        125                 130                 135

cag tgc agc tgc tcg gag ggg aat gtg tat tgt ggt ctc aag act tgc   603
Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys
    140                 145                 150

ccc aaa ctg acc tgt gca ttc cca gtc tct gtt cca gat tcc tgc tgc   651
Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro Asp Ser Cys Cys
155                 160                 165                 170

cga gta tgc aga ggg gat gga gaa tta tca tgg gaa cat tct gat gct   699
Arg Val Cys Arg Gly Asp Gly Glu Leu Ser Trp Glu His Ser Asp Ala
                175                 180                 185

gat atc ttc cgg caa cct gcc aac aga gaa gca aga cat tct tac ctc   747
Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg His Ser Tyr Leu
            190                 195                 200

cgt tcc ccc tac gat cct cca cca agc aga caa gct gga ggt ctt cct   795
Arg Ser Pro Tyr Asp Pro Pro Pro Ser Arg Gln Ala Gly Gly Leu Pro
        205                 210                 215

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Ser Trp His Ser Asn Leu Arg Ala Phe Gly Ile Val Glu Cys Val Leu
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Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys Ile His Cys Pro
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aat cga tac ccc tgc aag tat cct caa aaa tta gat gga aag tgc tgc   1083
Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Leu Asp Gly Lys Cys Cys
    300                 305                 310

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Lys Val Cys Pro Glu Glu Pro Pro Ser Gln Asn Phe Asp Ser Lys Gly
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            350                 355                 360

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Pro Gln Val Val Gly Ser Arg Leu Asp Tyr Ser Lys Gly His Ser Pro
        365                 370                 375

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Ala Leu Pro His
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gaagatcaag aaattctata tttcccactc taagtgagaa aacatgatag gaaaaagtat 3007

gaagagtctg gtctttacta gaacctgaca gagaagggaa ggctttgggg ccagggcttc 3067

atgagacaaa cttcctgcca gccaattaca cattctccca agaagagaag catagggcgt 3127

cctgggctgc aaagacactg aacattattg aagatgtgat ggggcaatgc caaccctctg 3187

ctgcttccct cttggaggaa acactatttc cagagtgcgg agatcaatca caggtcctga 3247

aggaaagtgg tgattcctgt gctagacgat tcacccgcag ggaaggtggt gattcccgtg 3307

ctagatgatt cactcacaaa ccttcccgcc caggtgttct ctgaaagctt agcctcaagg 3367

gaacacctaa agagctcccc tacctacata aacccctgcc tccaagtgta ggaactcacc 3427

tttctaaagc gctgtgggaa gcaggaactg ggcatctgtg ctaagtcaat gtagaatttc 3487

tccagcgttt taatgctggg tagaatatag agcatagggg aaaggggcca aactgcctat 3547

agttagtaga gaaaaatgaa tgtggttctt ttgtgcattt atgtgtatca taaacacttg 3607

ggaaagcaaa aaccataagc accattttgc aactttatcc attttccagt tagctcatgt 3667

aaacgagcac gaataacaaa acagtattac tctttcgcac ttctcacagg acatgtaccc 3727

aaatacggta cttatttatg tagtcactgt gtttcaggac ttttacgtta ataaaatttt 3787

tatttaaaat tttaaaaaaa aaaaaaaaaa aaaaaaaaaa 3827

<210> 6
<211> 382
<212> PRT
<213> Rattus norvegicus

<400> 6

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Met Glu Gly Ile Lys Tyr Ile Ala Ser Leu Val Phe Phe Phe Val Phe
  1               5                  10                  15

Leu Glu Ala Ser Lys Thr Glu Pro Val Lys His Ser Glu Thr Tyr Cys
             20                  25                  30

Met Phe Gln Asp Lys Lys Tyr Arg Val Gly Glu Lys Trp His Pro Tyr
         35                  40                  45

Leu Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu
     50                  55                  60

Asn Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Thr Leu His Cys
 65                  70                  75                  80

Leu Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Asp
                 85                  90                  95

Ser Leu Pro Pro Met Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
            100                 105                 110

Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe Ile Ala Glu Gly Leu
        115                 120                 125

Phe Gln Asn Arg Gln Pro Asn Gln Cys Ser Gln Cys Ser Cys Ser Glu
    130                 135                 140

Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
145                 150                 155                 160

Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp
                165                 170                 175

Gly Glu Leu Ser Trp Glu His Ser Asp Ala Asp Ile Phe Arg Gln Pro
            180                 185                 190

Ala Asn Arg Glu Ala Arg His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro
        195                 200                 205
```

Pro Pro Ser Arg Gln Ala Gly Gly Leu Pro Arg Phe Ala Gly Ser Arg
210 215 220

Ser His Arg Gly Ala Val Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile
225 230 235 240

Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val
245 250 255

Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Ser Asn Leu
260 265 270

Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
275 280 285

Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
290 295 300

Tyr Pro Gln Lys Leu Asp Gly Lys Cys Cys Lys Val Cys Pro Glu Glu
305 310 315 320

Pro Pro Ser Gln Asn Phe Asp Ser Lys Gly Ser Phe Cys Gly Glu Glu
325 330 335

Thr Met Pro Val Tyr Glu Ala Val Leu Val Glu Asp Gly Glu Thr Ala
340 345 350

Arg Lys Val Ala Leu Glu Thr Glu Lys Pro Pro Gln Val Val Gly Ser
355 360 365

Arg Leu Asp Tyr Ser Lys Gly His Ser Pro Ala Leu Pro His
370 375 380

<210> 7
<211> 311
<212> PRT
<213> Mus musculus

<400> 7
Glu Gln Val Lys His Ser Asp Thr Tyr Cys Val Phe Gln Asp Lys Lys
1 5 10 15

Tyr Arg Val Gly Glu Lys Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu
20 25 30

Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys
35 40 45

Ser Arg Val Arg Cys Pro Ser Leu His Cys Leu Ser Pro Val His Ile
50 55 60

Pro His Leu Cys Cys Pro Arg Cys Pro Asp Ser Leu Pro Pro Val Asn
65 70 75 80

Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln

```
                85                  90                  95

His Gly Glu Leu Phe Ile Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro
            100                 105                 110

Asn Gln Cys Ser Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly
        115                 120                 125

Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro
    130                 135                 140

Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Ala Glu Leu Ser Trp Glu
145                 150                 155                 160

His Ala Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg
                165                 170                 175

His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro Pro Pro Asn Arg Gln Ala
            180                 185                 190

Gly Gly Leu Pro Arg Phe Pro Gly Ser Arg Ser His Arg Gly Ala Val
        195                 200                 205

Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn
    210                 215                 220

Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr
225                 230                 235                 240

Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile Val
                245                 250                 255

Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys
            260                 265                 270

Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile Asp
        275                 280                 285

Gly Lys Cys Cys Lys Val Cys Pro Gly Lys Lys Ala Lys Gly Ala Leu
    290                 295                 300

Ala Gly Gly Pro Ala Phe Gly
305                 310


<210> 8
<211> 345
<212> PRT
<213> Mus musculus

<400> 8
Met Asp Gly Met Lys Tyr Ile Ile Ser Leu Phe Phe Ile Phe Val Phe
  1               5                  10                  15

Leu Glu Gly Ser Lys Thr Glu Gln Val Lys His Ser Asp Thr Tyr Cys
             20                  25                  30
```

Val Phe Gln Asp Lys Lys Tyr Arg Val Gly Glu Lys Trp His Pro Tyr
35 40 45

Leu Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu
50 55 60

Asn Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Ser Leu His Cys
65 70 75 80

Leu Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Asp
85 90 95

Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
100 105 110

Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe Ile Ala Glu Gly Leu
115 120 125

Phe Gln Asn Arg Gln Pro Asn Gln Cys Ser Gln Cys Ser Cys Ser Glu
130 135 140

Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
145 150 155 160

Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp
165 170 175

Ala Glu Leu Ser Trp Glu His Ala Asp Gly Asp Ile Phe Arg Gln Pro
180 185 190

Ala Asn Arg Glu Ala Arg His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro
195 200 205

Pro Pro Asn Arg Gln Ala Gly Gly Leu Pro Arg Phe Pro Gly Ser Arg
210 215 220

Ser His Arg Gly Ala Val Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile
225 230 235 240

Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val
245 250 255

Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu
260 265 270

Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
275 280 285

Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
290 295 300

Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Gly Lys
305 310 315 320

Lys Ala Lys Gly Ala Leu Ala Gly Gly Pro Ala Phe Gly Gly Ser Gly
325 330 335

```
Thr Asp Tyr Lys Asp Asp Asp Asp Lys
            340                 345


<210> 9
<211> 323
<212> PRT
<213> Mus musculus

<400> 9
Glu Gln Val Lys His Ser Asp Thr Tyr Cys Val Phe Gln Asp Lys Lys
  1               5                  10                  15

Tyr Arg Val Gly Glu Lys Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu
             20                  25                  30

Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys
         35                  40                  45

Ser Arg Val Arg Cys Pro Ser Leu His Cys Leu Ser Pro Val His Ile
     50                  55                  60

Pro His Leu Cys Cys Pro Arg Cys Pro Asp Ser Leu Pro Pro Val Asn
 65                  70                  75                  80

Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln
                 85                  90                  95

His Gly Glu Leu Phe Ile Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro
            100                 105                 110

Asn Gln Cys Ser Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly
        115                 120                 125

Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro
    130                 135                 140

Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Ala Glu Leu Ser Trp Glu
145                 150                 155                 160

His Ala Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg
                165                 170                 175

His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro Pro Pro Asn Arg Gln Ala
            180                 185                 190

Gly Gly Leu Pro Arg Phe Pro Gly Ser Arg Ser His Arg Gly Ala Val
        195                 200                 205

Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn
    210                 215                 220

Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr
225                 230                 235                 240

Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile Val
                245                 250                 255
```

Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys
260 265 270

Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile Asp
275 280 285

Gly Lys Cys Cys Lys Val Cys Pro Gly Lys Lys Ala Lys Gly Ala Leu
290 295 300

Ala Gly Gly Pro Ala Phe Gly Gly Ser Gly Thr Asp Tyr Lys Asp Asp
305 310 315 320

Asp Asp Lys

<210> 10
<211> 962
<212> PRT
<213> Mus musculus

<400> 10
Met Pro Ser Leu Pro Ala Pro Pro Ala Pro Arg Leu Leu Leu Gly Leu
1 5 10 15

Leu Leu Leu Gly Ser Arg Pro Ala Ser Gly Thr Gly Pro Glu Pro Pro
20 25 30

Ala Leu Pro Ile Arg Ser Glu Lys Glu Pro Leu Pro Val Arg Gly Ala
35 40 45

Ala Gly Cys Ser Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp
50 55 60

His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys
65 70 75 80

Ala Cys Glu Ala Pro Gln Trp Ala Arg Arg Gly Arg Gly Pro Gly Arg
85 90 95

Val Ser Cys Lys Asn Ile Lys Pro Gln Cys Pro Thr Leu Ala Cys Arg
100 105 110

Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu
115 120 125

Arg Ser Asn Leu Asp Pro Gln Pro Ala Gly Leu Val Phe Glu Tyr Pro
130 135 140

Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Val
145 150 155 160

Gly Glu Arg Thr Arg Ala Asp Gly His Thr Asp Phe Val Ala Leu Leu
165 170 175

Thr Gly Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Val Ser Leu Leu

```
            180                 185                 190

Arg Ser Ser Leu Arg Phe Ser Val Ser Tyr Gln Arg Leu Asp Arg Pro
        195                 200                 205

Ser Arg Val Arg Phe Thr Asp Pro Thr Gly Asn Ile Leu Phe Glu His
    210                 215                 220

Pro Ala Thr Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala
225                 230                 235                 240

Val Pro Arg Leu Ser Val Arg Leu Leu Arg Ala Glu Gln Leu Arg Val
                245                 250                 255

Ala Leu Val Thr Ser Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu
            260                 265                 270

Ile Trp Gln Gly Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr
        275                 280                 285

Leu Glu Asp Pro Leu Gln Arg Gly Val Gly Gly Ile Ala Leu Leu Thr
    290                 295                 300

Leu Ser Asp Thr Glu Asp Ser Leu His Phe Leu Leu Leu Phe Arg Gly
305                 310                 315                 320

Leu Leu Gly Gly Leu Ala Gln Ala Pro Leu Lys Leu Gln Ile Leu His
                325                 330                 335

Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala Asn Thr Ser Ala Gln Glu
            340                 345                 350

Pro Gly Phe Ala Glu Val Leu Pro Ser Leu Thr Asp Gln Glu Met Asp
        355                 360                 365

Trp Leu Glu Leu Gly Glu Leu Gln Met Val Leu Glu Lys Ala Gly Gly
    370                 375                 380

Pro Glu Leu Arg Ile Ser Gly Tyr Ile Thr Thr Arg Gln Ser Cys Asp
385                 390                 395                 400

Val Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu Ile Pro Val Gln
                405                 410                 415

Thr Gly Ala Ala Gly Ser Ala Ser Phe Ile Leu Leu Gly Asn Gly Ser
            420                 425                 430

Leu Ile Tyr Gln Val Gln Val Val Gly Thr Gly Ser Glu Val Val Ala
        435                 440                 445

Met Thr Leu Glu Thr Lys Pro Gln Arg Lys Asn Gln Arg Thr Val Leu
    450                 455                 460

Cys His Met Ala Gly Leu Gln Pro Gly Gly His Met Ala Val Gly Met
465                 470                 475                 480

Cys Ser Gly Leu Gly Ala Arg Gly Ala His Met Leu Leu Gln Asn Glu
```

485 490 495

Leu Phe Leu Asn Val Gly Thr Lys Asp Phe Pro Asp Gly Glu Leu Arg
500 505 510

Gly His Val Thr Ala Leu Cys Tyr Ser Gly His Ser Ala Arg Tyr Asp
515 520 525

Arg Leu Pro Val Pro Leu Ala Gly Ala Leu Val Leu Pro Pro Val Arg
530 535 540

Ser Gln Ala Ala Gly His Ala Trp Leu Ser Leu Asp Thr His Cys His
545 550 555 560

Leu His Tyr Glu Val Leu Leu Ala Gly Leu Gly Gly Ser Glu Gln Gly
565 570 575

Thr Val Thr Ala His Leu Leu Gly Pro Pro Gly Met Pro Gly Pro Gln
580 585 590

Arg Leu Leu Lys Gly Phe Tyr Gly Ser Glu Ala Gln Gly Val Val Lys
595 600 605

Asp Leu Glu Pro Val Leu Leu Arg His Leu Ala Gln Gly Thr Ala Ser
610 615 620

Leu Leu Ile Thr Thr Lys Ser Ser Pro Arg Gly Glu Leu Arg Gly Gln
625 630 635 640

Val His Ile Ala Ser Gln Cys Glu Ala Gly Gly Leu Arg Leu Ala Ser
645 650 655

Glu Gly Val Gln Met Pro Leu Ala Pro Asn Gly Glu Ala Ala Thr Ser
660 665 670

Pro Met Leu Pro Ala Gly Pro Gly Pro Glu Ala Pro Val Pro Ala Lys
675 680 685

His Gly Ser Pro Gly Arg Pro Arg Asp Pro Asn Thr Cys Phe Phe Glu
690 695 700

Gly Gln Gln Arg Pro His Gly Ala Arg Trp Ala Pro Asn Tyr Asp Pro
705 710 715 720

Leu Cys Ser Leu Cys Ile Cys Gln Arg Arg Thr Val Ile Cys Asp Pro
725 730 735

Val Val Cys Pro Pro Pro Ser Cys Pro His Pro Val Gln Ala Leu Asp
740 745 750

Gln Cys Cys Pro Val Cys Pro Glu Lys Gln Arg Ser Arg Asp Leu Pro
755 760 765

Ser Leu Pro Asn Leu Glu Pro Gly Glu Gly Cys Tyr Phe Asp Gly Asp
770 775 780

Arg Ser Trp Arg Ala Ala Gly Thr Arg Trp His Pro Val Val Pro Pro

785 790 795 800

Phe Gly Leu Ile Lys Cys Ala Val Cys Thr Cys Lys Gly Ala Thr Gly
805 810 815

Glu Val His Cys Glu Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln
820 825 830

Pro Val Arg Ala Asn Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly
835 840 845

Ser Gly Thr Asn Ala Lys Leu Gly Asp Pro Met Gln Ala Asp Gly Pro
850 855 860

Arg Gly Cys Arg Phe Ala Gly Gln Trp Phe Pro Glu Asn Gln Ser Trp
865 870 875 880

His Pro Ser Val Pro Pro Phe Gly Glu Met Ser Cys Ile Thr Cys Arg
885 890 895

Cys Gly Ala Gly Val Pro His Cys Glu Arg Asp Asp Cys Ser Pro Pro
900 905 910

Leu Ser Cys Gly Ser Gly Lys Glu Ser Arg Cys Cys Ser His Cys Thr
915 920 925

Ala Gln Arg Ser Ser Glu Thr Arg Thr Leu Pro Glu Leu Glu Lys Glu
930 935 940

Ala Glu His Ser Val Asp Gly Ser Gly Thr Asp Tyr Lys Asp Asp Asp
945 950 955 960

Asp Lys

<210> 11
<211> 431
<212> PRT
<213> Homo sapiens

<400> 11
Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met Phe Gln Asp Lys Lys
1 5 10 15

Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu
20 25 30

Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys
35 40 45

Ser Arg Val Arg Cys Pro Asn Val His Cys Leu Ser Pro Val His Ile
50 55 60

Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp Ser Leu Pro Pro Val
65 70 75 80

Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr
85 90 95

Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu Phe Gln Asn Arg Gln
100 105 110

Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys
115 120 125

Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val
130 135 140

Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Gly Glu Leu Ser Trp
145 150 155 160

Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala
165 170 175

Arg His Ser Tyr His Arg Ser His Tyr Asp Pro Pro Pro Ser Arg Gln
180 185 190

Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg Ser His Arg Gly Ala
195 200 205

Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile
210 215 220

Asn Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr
225 230 235 240

Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile
245 250 255

Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys
260 265 270

Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile
275 280 285

Asp Gly Lys Cys Cys Lys Val Cys Pro Gly Lys Lys Ala Lys Glu Glu
290 295 300

Leu Pro Gly Gln Ser Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu
305 310 315 320

Thr Met Pro Val Tyr Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr
325 330 335

Arg Lys Ile Ala Leu Glu Thr Glu Arg Pro Pro Gln Val Glu Val His
340 345 350

Val Trp Thr Ile Arg Lys Gly Ile Leu Gln His Phe His Ile Glu Lys
355 360 365

Ile Ser Lys Arg Met Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr
370 375 380

```
Arg Thr Thr Leu Ser Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln
385                 390                 395                 400

Ile Ser Gln Met Cys Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp
                405                 410                 415

Leu Val Lys Val Leu Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
            420                 425                 430
```

<210> 12
<211> 434
<212> PRT
<213> Homo sapiens

<400> 12

```
Gly Lys Thr Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met Phe Gln
  1               5                  10                  15

Asp Lys Lys Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu Glu Pro
             20                  25                  30

Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn
         35                  40                  45

Val Leu Cys Ser Arg Val Arg Cys Pro Asn Val His Cys Leu Ser Pro
     50                  55                  60

Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp Ser Leu
 65                  70                  75                  80

Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly
                85                  90                  95

Thr Thr Tyr Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu Phe Gln
            100                 105                 110

Asn Arg Gln Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu Gly Asn
        115                 120                 125

Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro
    130                 135                 140

Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Gly Glu
145                 150                 155                 160

Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn
                165                 170                 175

Arg Glu Ala Arg His Ser Tyr His Arg Ser His Tyr Asp Pro Pro Pro
            180                 185                 190

Ser Arg Gln Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg Ser His
        195                 200                 205

Arg Gly Ala Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln
    210                 215                 220
```

Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn
225 230 235 240

Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala
245 250 255

Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln
260 265 270

Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro
275 280 285

Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Gly Lys Lys Ala
290 295 300

Lys Glu Glu Leu Pro Gly Gln Ser Phe Asp Asn Lys Gly Tyr Phe Cys
305 310 315 320

Gly Glu Glu Thr Met Pro Val Tyr Glu Ser Val Phe Met Glu Asp Gly
325 330 335

Glu Thr Thr Arg Lys Ile Ala Leu Glu Thr Glu Arg Pro Pro Gln Val
340 345 350

Glu Val His Val Trp Thr Ile Arg Lys Gly Ile Leu Gln His Phe His
355 360 365

Ile Glu Lys Ile Ser Lys Arg Met Phe Glu Glu Leu Pro His Phe Lys
370 375 380

Leu Val Thr Arg Thr Thr Leu Ser Gln Trp Lys Ile Phe Thr Glu Gly
385 390 395 400

Glu Ala Gln Ile Ser Gln Met Cys Ser Ser Arg Val Cys Arg Thr Glu
405 410 415

Leu Glu Asp Leu Val Lys Val Leu Tyr Leu Glu Arg Ser Glu Lys Gly
420 425 430

His Cys

<210> 13
<211> 360
<212> PRT
<213> Rattus norvegicus

<400> 13
Glu Pro Val Lys His Ser Glu Thr Tyr Cys Met Phe Gln Asp Lys Lys
1 5 10 15

Tyr Arg Val Gly Glu Lys Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu
20 25 30

Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys

```
          35                  40                  45

Ser Arg Val Arg Cys Pro Thr Leu His Cys Leu Ser Pro Val His Ile
     50                  55                  60

Pro His Leu Cys Cys Pro Arg Cys Pro Asp Ser Leu Pro Pro Met Asn
 65                  70                  75                  80

Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr Gln
                 85                  90                  95

His Gly Glu Leu Phe Ile Ala Glu Gly Leu Phe Gln Asn Arg Gln Pro
            100                 105                 110

Asn Gln Cys Ser Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys Gly
        115                 120                 125

Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val Pro
    130                 135                 140

Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Gly Glu Leu Ser Trp Glu
145                 150                 155                 160

His Ser Asp Ala Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala Arg
                165                 170                 175

His Ser Tyr Leu Arg Ser Pro Tyr Asp Pro Pro Pro Ser Arg Gln Ala
            180                 185                 190

Gly Gly Leu Pro Arg Phe Ala Gly Ser Arg Ser His Arg Gly Ala Val
        195                 200                 205

Ile Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile Asn
    210                 215                 220

Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr Tyr
225                 230                 235                 240

Ser His Gly Glu Ser Trp His Ser Asn Leu Arg Ala Phe Gly Ile Val
                245                 250                 255

Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys Lys
            260                 265                 270

Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Leu Asp
        275                 280                 285

Gly Lys Cys Cys Lys Val Cys Pro Glu Glu Pro Pro Ser Gln Asn Phe
    290                 295                 300

Asp Ser Lys Gly Ser Phe Cys Gly Glu Glu Thr Met Pro Val Tyr Glu
305                 310                 315                 320

Ala Val Leu Val Glu Asp Gly Glu Thr Ala Arg Lys Val Ala Leu Glu
                325                 330                 335

Thr Glu Lys Pro Pro Gln Val Val Gly Ser Arg Leu Asp Tyr Ser Lys
```

340 345 350

Gly His Ser Pro Ala Leu Pro His
355 360

<210> 14
<211> 20
<212> DNA
<213> Mus musculus

<400> 14
agtgcccagc tttagtccac 20

<210> 15
<211> 20
<212> DNA
<213> Mus musculus

<400> 15
gagatgagga atatgcacgg 20

<210> 16
<211> 18
<212> DNA
<213> Homo sapiens

<400> 16
gacatctgac tcggctgc 18

<210> 17
<211> 17
<212> DNA
<213> Homo sapiens

<400> 17
tcacgcagta aaccaac 17

<210> 18
<211> 948
<212> PRT
<213> Mus musculus

<400> 18
Met Pro Ser Leu Pro Ala Pro Pro Ala Pro Arg Leu Leu Leu Gly Leu
1 5 10 15

Leu Leu Leu Gly Ser Arg Pro Ala Ser Gly Thr Gly Pro Glu Pro Pro
20 25 30

Ala Leu Pro Ile Arg Ser Glu Lys Glu Pro Leu Pro Val Arg Gly Ala
35 40 45

```
Ala Gly Cys Ser Phe Gly Gly Lys Val Tyr Ala Leu Asp Glu Thr Trp
     50                  55                  60

His Pro Asp Leu Gly Glu Pro Phe Gly Val Met Arg Cys Val Leu Cys
 65                  70                  75                  80

Ala Cys Glu Ala Pro Gln Trp Ala Arg Arg Gly Arg Gly Pro Gly Arg
                85                  90                  95

Val Ser Cys Lys Asn Ile Lys Pro Gln Cys Pro Thr Leu Ala Cys Arg
            100                 105                 110

Gln Pro Arg Gln Leu Pro Gly His Cys Cys Gln Thr Cys Pro Gln Glu
        115                 120                 125

Arg Ser Asn Leu Asp Pro Gln Pro Ala Gly Leu Val Phe Glu Tyr Pro
    130                 135                 140

Arg Asp Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Val
145                 150                 155                 160

Gly Glu Arg Thr Arg Ala Asp Gly His Thr Asp Phe Val Ala Leu Leu
                165                 170                 175

Thr Gly Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Val Ser Leu Leu
            180                 185                 190

Arg Ser Ser Leu Arg Phe Ser Val Ser Tyr Gln Arg Leu Asp Arg Pro
        195                 200                 205

Ser Arg Val Arg Phe Thr Asp Pro Thr Gly Asn Ile Leu Phe Glu His
    210                 215                 220

Pro Ala Thr Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala
225                 230                 235                 240

Val Pro Arg Leu Ser Val Arg Leu Leu Arg Ala Glu Gln Leu Arg Val
                245                 250                 255

Ala Leu Val Thr Ser Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu
            260                 265                 270

Ile Trp Gln Gly Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr
        275                 280                 285

Leu Glu Asp Pro Leu Gln Arg Gly Val Gly Gly Ile Ala Leu Leu Thr
    290                 295                 300

Leu Ser Asp Thr Glu Asp Ser Leu His Phe Leu Leu Leu Phe Arg Gly
305                 310                 315                 320

Leu Leu Gly Gly Leu Ala Gln Ala Pro Leu Lys Leu Gln Ile Leu His
                325                 330                 335

Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala Asn Thr Ser Ala Gln Glu
            340                 345                 350
```

```
Pro Gly Phe Ala Glu Val Leu Pro Ser Leu Thr Asp Gln Glu Met Asp
        355                 360                 365

Trp Leu Glu Leu Gly Glu Leu Gln Met Val Leu Glu Lys Ala Gly Gly
    370                 375                 380

Pro Glu Leu Arg Ile Ser Gly Tyr Ile Thr Thr Arg Gln Ser Cys Asp
385                 390                 395                 400

Val Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu Ile Pro Val Gln
                405                 410                 415

Thr Gly Ala Ala Gly Ser Ala Ser Phe Ile Leu Leu Gly Asn Gly Ser
            420                 425                 430

Leu Ile Tyr Gln Val Gln Val Val Gly Thr Gly Ser Glu Val Val Ala
        435                 440                 445

Met Thr Leu Glu Thr Lys Pro Gln Arg Lys Asn Gln Arg Thr Val Leu
    450                 455                 460

Cys His Met Ala Gly Leu Gln Pro Gly Gly His Met Ala Val Gly Met
465                 470                 475                 480

Cys Ser Gly Leu Gly Ala Arg Gly Ala His Met Leu Leu Gln Asn Glu
                485                 490                 495

Leu Phe Leu Asn Val Gly Thr Lys Asp Phe Pro Asp Gly Glu Leu Arg
            500                 505                 510

Gly His Val Thr Ala Leu Cys Tyr Ser Gly His Ser Ala Arg Tyr Asp
        515                 520                 525

Arg Leu Pro Val Pro Leu Ala Gly Ala Leu Val Leu Pro Pro Val Arg
    530                 535                 540

Ser Gln Ala Ala Gly His Ala Trp Leu Ser Leu Asp Thr His Cys His
545                 550                 555                 560

Leu His Tyr Glu Val Leu Leu Ala Gly Leu Gly Gly Ser Glu Gln Gly
                565                 570                 575

Thr Val Thr Ala His Leu Leu Gly Pro Pro Gly Met Pro Gly Pro Gln
            580                 585                 590

Arg Leu Leu Lys Gly Phe Tyr Gly Ser Glu Ala Gln Gly Val Val Lys
        595                 600                 605

Asp Leu Glu Pro Val Leu Leu Arg His Leu Ala Gln Gly Thr Ala Ser
    610                 615                 620

Leu Leu Ile Thr Thr Lys Ser Ser Pro Arg Gly Glu Leu Arg Gly Gln
625                 630                 635                 640

Val His Ile Ala Ser Gln Cys Glu Ala Gly Gly Leu Arg Leu Ala Ser
                645                 650                 655
```

Glu Gly Val Gln Met Pro Leu Ala Pro Asn Gly Glu Ala Ala Thr Ser
660 665 670

Pro Met Leu Pro Ala Gly Pro Gly Pro Glu Ala Pro Val Pro Ala Lys
675 680 685

His Gly Ser Pro Gly Arg Pro Arg Asp Pro Asn Thr Cys Phe Phe Glu
690 695 700

Gly Gln Gln Arg Pro His Gly Ala Arg Trp Ala Pro Asn Tyr Asp Pro
705 710 715 720

Leu Cys Ser Leu Cys Ile Cys Gln Arg Arg Thr Val Ile Cys Asp Pro
725 730 735

Val Val Cys Pro Pro Pro Ser Cys Pro His Pro Val Gln Ala Leu Asp
740 745 750

Gln Cys Cys Pro Val Cys Pro Glu Lys Gln Arg Ser Arg Asp Leu Pro
755 760 765

Ser Leu Pro Asn Leu Glu Pro Gly Glu Gly Cys Tyr Phe Asp Gly Asp
770 775 780

Arg Ser Trp Arg Ala Ala Gly Thr Arg Trp His Pro Val Val Pro Pro
785 790 795 800

Phe Gly Leu Ile Lys Cys Ala Val Cys Thr Cys Lys Gly Ala Thr Gly
805 810 815

Glu Val His Cys Glu Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln
820 825 830

Pro Val Arg Ala Asn Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly
835 840 845

Ser Gly Thr Asn Ala Lys Leu Gly Asp Pro Met Gln Ala Asp Gly Pro
850 855 860

Arg Gly Cys Arg Phe Ala Gly Gln Trp Phe Pro Glu Asn Gln Ser Trp
865 870 875 880

His Pro Ser Val Pro Pro Phe Gly Glu Met Ser Cys Ile Thr Cys Arg
885 890 895

Cys Gly Ala Gly Val Pro His Cys Glu Arg Asp Asp Cys Ser Pro Pro
900 905 910

Leu Ser Cys Gly Ser Gly Lys Glu Ser Arg Cys Cys Ser His Cys Thr
915 920 925

Ala Gln Arg Ser Ser Glu Thr Arg Thr Leu Pro Glu Leu Glu Lys Glu
930 935 940

Ala Glu His Ser
945

<210> 19
<211> 176
<212> PRT
<213> Rattus norvegicus

<400> 19
Gly Gly Leu Arg Leu Ala Ser Glu Gly Val Arg Met Ser Leu Ala Pro
1 5 10 15

Asn Gly Glu Ala Ala Thr Ser Pro Met Leu Pro Ala Gly Pro Gly Pro
20 25 30

Glu Ala Pro Val Pro Ala Lys His Gly Ser Ser Gly Arg Pro Arg Asp
35 40 45

Pro Asn Thr Cys Phe Phe Glu Gly Gln Gln Arg Pro His Gly Ala Arg
50 55 60

Trp Ala Pro Asn Tyr Asp Pro Leu Cys Ser Leu Cys Thr Cys Gln Arg
65 70 75 80

Arg Thr Val Ile Cys Asp Pro Val Val Cys Pro Pro Pro Arg Cys Ser
85 90 95

Gln Pro Val Gln Ala Leu Asp Gln Trp Cys Pro Val Cys Ser Glu Lys
100 105 110

Gln Arg Ser Arg Asp Leu Ser Ser Leu Pro Asn Leu Glu Pro Gly Glu
115 120 125

Gly Cys Tyr Phe Asp Gly Asp Arg Ser Trp Arg Ala Ala Gly Thr Arg
130 135 140

Trp His Pro Val Val Pro Pro Phe Gly Leu Ile Lys Cys Gly Val Cys
145 150 155 160

Thr Cys Lys Gly Val Asn Gly Glu Val His Ser Glu Lys Val Gln Cys
165 170 175

<210> 20
<211> 801
<212> PRT
<213> Homo sapiens

<400> 20
Gln Val Ala Ala Gly His Cys Cys Gln Thr Cys Pro Gln Glu Arg Ser
1 5 10 15

Ser Ser Glu Arg Gln Pro Ser Gly Leu Ser Phe Glu Tyr Pro Arg Asp
20 25 30

Pro Glu His Arg Ser Tyr Ser Asp Arg Gly Glu Pro Gly Ala Glu Glu

```
         35                  40                  45

Arg Ala Arg Gly Asp Gly His Thr Asp Phe Val Ala Leu Leu Thr Gly
     50                  55                  60

Pro Arg Ser Gln Ala Val Ala Arg Ala Arg Ala Ser Leu Leu Arg Ser
 65                  70                  75                  80

Ser Leu Arg Phe Ser Ile Ser Tyr Arg Arg Leu Asp Arg Pro Thr Arg
                 85                  90                  95

Ile Arg Phe Ser Asp Pro Asn Gly Ser Val Leu Phe Glu His Pro Ala
            100                 105                 110

Ala Pro Thr Gln Asp Gly Leu Val Cys Gly Val Trp Arg Ala Val Pro
        115                 120                 125

Arg Leu Ser Leu Arg Leu Leu Arg Ala Glu Gln Leu His Val Ala Leu
    130                 135                 140

Val Thr Leu Thr His Pro Ser Gly Glu Val Trp Gly Pro Leu Ile Arg
145                 150                 155                 160

His Arg Ala Leu Ala Ala Glu Thr Phe Ser Ala Ile Leu Thr Leu Glu
                165                 170                 175

Gly Pro Pro Gln Gln Gly Val Gly Gly Ile Thr Leu Leu Thr Leu Ser
            180                 185                 190

Asp Thr Glu Asp Ser Leu His Phe Leu Leu Leu Phe Arg Gly Leu Leu
        195                 200                 205

Glu Pro Arg Ser Gly Gly Leu Thr Gln Val Pro Leu Arg Leu Gln Ile
    210                 215                 220

Leu His Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala Asn Val Ser Ala
225                 230                 235                 240

Gln Glu Pro Gly Phe Ala Glu Val Leu Pro Asn Leu Thr Val Gln Glu
                245                 250                 255

Met Asp Trp Leu Val Leu Gly Glu Leu Gln Met Ala Leu Glu Trp Ala
            260                 265                 270

Gly Arg Pro Gly Leu Arg Ile Ser Gly His Ile Ala Ala Arg Lys Ser
        275                 280                 285

Cys Asp Val Leu Gln Ser Val Leu Cys Gly Ala Asp Ala Leu Ile Pro
    290                 295                 300

Val Gln Thr Gly Ala Ala Gly Ser Ala Ser Leu Thr Leu Leu Gly Asn
305                 310                 315                 320

Gly Ser Leu Ile Tyr Gln Ala Val Gly Ile Cys Pro Gly Leu Gly Ala
                325                 330                 335

Arg Gly Ala His Met Leu Leu Gln Asn Glu Leu Phe Leu Asn Val Gly
```

```
            340                 345                 350

Thr Lys Asp Phe Pro Asp Gly Glu Leu Arg Gly His Val Ala Ala Leu
        355                 360                 365

Pro Tyr Cys Gly His Ser Ala Arg His Asp Thr Leu Pro Val Pro Leu
    370                 375                 380

Ala Gly Ala Leu Val Leu Pro Pro Val Lys Ser Gln Ala Ala Gly His
385                 390                 395                 400

Ala Trp Leu Ser Leu Asp Thr His Cys His Leu His Tyr Glu Val Leu
                405                 410                 415

Leu Ala Gly Leu Gly Gly Ser Glu Gln Gly Thr Val Thr Ala His Leu
            420                 425                 430

Leu Gly Pro Pro Gly Thr Pro Gly Pro Arg Arg Leu Leu Lys Gly Phe
        435                 440                 445

Tyr Gly Ser Glu Ala Gln Gly Val Val Lys Asp Leu Glu Pro Glu Leu
    450                 455                 460

Leu Arg His Leu Ala Lys Gly Met Ala Ser Leu Leu Ile Thr Thr Lys
465                 470                 475                 480

Gly Ser Pro Arg Gly Glu Leu Arg Gly Gln Val His Ile Ala Asn Gln
                485                 490                 495

Cys Glu Val Gly Gly Leu Arg Leu Glu Ala Ala Gly Ala Glu Gly Val
            500                 505                 510

Arg Ala Leu Gly Ala Pro Asp Pro Ala Ser Ala Ala Pro Pro Val Val
        515                 520                 525

Pro Gly Leu Pro Ala Leu Ala Pro Ala Lys Pro Gly Gly Pro Gly Arg
    530                 535                 540

Pro Arg Asp Pro Asn Thr Cys Phe Phe Glu Gly Gln Gln Arg Pro His
545                 550                 555                 560

Gly Ala Arg Trp Ala Pro Asn Tyr Asp Pro Leu Cys Ser Leu Cys Thr
                565                 570                 575

Cys Gln Arg Arg Thr Val Ile Cys Asp Pro Val Val Cys Pro Pro Pro
            580                 585                 590

Ser Cys Pro His Pro Val Gln Ala Pro Asp Gln Cys Cys Pro Val Cys
        595                 600                 605

Pro Glu Lys Gln Asp Val Arg Asp Leu Pro Gly Leu Pro Arg Ser Arg
    610                 615                 620

Asp Pro Gly Glu Gly Cys Tyr Phe Asp Gly Asp Arg Ser Trp Arg Ala
625                 630                 635                 640

Ala Gly Thr Arg Trp His Pro Val Val Pro Pro Phe Gly Leu Ile Lys
```

645 650 655

Cys Ala Val Cys Thr Cys Lys Gly Gly Thr Gly Glu Val His Cys Glu
660 665 670

Lys Val Gln Cys Pro Arg Leu Ala Cys Ala Gln Pro Val Arg Val Asn
675 680 685

Pro Thr Asp Cys Cys Lys Gln Cys Pro Val Gly Ser Gly Ala His Pro
690 695 700

Gln Leu Gly Asp Pro Met Gln Ala Asp Gly Pro Arg Gly Cys Arg Phe
705 710 715 720

Ala Gly Gln Trp Phe Pro Glu Ser Gln Ser Trp His Pro Ser Val Pro
725 730 735

Pro Phe Gly Glu Met Ser Cys Ile Thr Cys Arg Cys Gly Ala Gly Val
740 745 750

Pro His Cys Glu Arg Asp Asp Cys Ser Leu Pro Leu Ser Cys Gly Ser
755 760 765

Gly Lys Glu Ser Arg Cys Cys Ser Arg Cys Thr Ala His Arg Arg Pro
770 775 780

Ala Pro Glu Thr Arg Thr Asp Pro Glu Leu Glu Lys Glu Ala Glu Gly
785 790 795 800

Ser

<210> 21
<211> 44
<212> DNA
<213> Mus musculus

<400> 21
gctagcggcc gcgccaccat ggatggcatg aaatacatca tttc 44

<210> 22
<211> 33
<212> DNA
<213> Mus musculus

<400> 22
ggtaccggat ccaccaaagg cagggcctcc agc 33

<210> 23
<211> 39
<212> DNA
<213> Mus musculus

<400> 23

gctagcggcc gcgccaccat gccgagcctc ccggccccg 39

<210> 24
<211> 36
<212> DNA
<213> Mus musculus

<400> 24
ggatccgtcg acggagtgct ccgcttcttt ctccag 36

<210> 25
<211> 1341
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1341)

<400> 25
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atg gga ggc atg aaa tac atc ttt tcg ttg ttg ttc ttt ctt ttg cta   48
Met Gly Gly Met Lys Tyr Ile Phe Ser Leu Leu Phe Phe Leu Leu Leu
  1               5                  10                  15

gaa gga ggc aaa aca gag caa gta aaa cat tca gag aca tat tgc atg   96
Glu Gly Gly Lys Thr Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met
             20                  25                  30

ttt caa gac aag aag tac aga gtg ggt gag aga tgg cat cct tac ctg   144
Phe Gln Asp Lys Lys Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu
         35                  40                  45

gaa cct tat ggg ttg gtt tac tgc gtg aac tgc atc tgc tca gag aat   192
Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn
     50                  55                  60

ggg aat gtg ctt tgc agc cga gtc aga tgt cca aat gtt cat tgc ctt   240
Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Asn Val His Cys Leu
 65                  70                  75                  80

tct cct gtg cat att cct cat ctg tgc tgc cct cgc tgc cca gaa gac   288
Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp
                 85                  90                  95

tcc tta ccc cca gtg aac aat aag gtg acc agc aag tct tgc gag tac   336
Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
            100                 105                 110

aat ggg aca act tac caa cat gga gag ctg ttc gta gct gaa ggg ctc   384
Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu
        115                 120                 125

ttt cag aat cgg caa ccc aat caa tgc acc cag tgc agc tgt tcg gag   432
Phe Gln Asn Arg Gln Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu
    130                 135                 140
```

```
gga aac gtg tat tgt ggt ctc aag act tgc ccc aaa tta acc tgt gcc   480
Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
145                 150                 155                 160

ttc cca gtc tct gtt cca gat tcc tgc tgc cgg gta tgc aga gga gat   528
Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp
                165                 170                 175

gga gaa ctg tca tgg gaa cat tct gat ggt gat atc ttc cgg caa cct   576
Gly Glu Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro
            180                 185                 190

gcc aac aga gaa gca aga cat tct tac cac cgc tct cac tat gat cct   624
Ala Asn Arg Glu Ala Arg His Ser Tyr His Arg Ser His Tyr Asp Pro
        195                 200                 205

cca cca agc cga cag gct gga ggt ctg tcc cgc ttt cct ggg gcc aga   672
Pro Pro Ser Arg Gln Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg
    210                 215                 220

agt cac cgg gga gct ctt atg gat tcc cag caa gca tca gga acc att   720
Ser His Arg Gly Ala Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile
225                 230                 235                 240

gtg caa att gtc atc aat aac aaa cac aag cat gga caa gtg tgt gtt   768
Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val
                245                 250                 255

tcc aat gga aag acc tat tct cat ggc gag tcc tgg cac cca aac ctc   816
Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu
            260                 265                 270

cgg gca ttt ggc att gtg gag tgt gtg cta tgt act tgt aat gtc acc   864
Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
        275                 280                 285

aag caa gag tgt aag aaa atc cac tgc ccc aat cga tac ccc tgc aag   912
Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
    290                 295                 300

tat cct caa aaa ata gac gga aag tgc tgc aag gtg tgt cca gaa gaa   960
Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Glu Glu
305                 310                 315                 320

ctt cca ggc caa agc ttt gac aat aaa ggc tac ttc tgc ggg gaa gaa   1008
Leu Pro Gly Gln Ser Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu
                325                 330                 335

acg atg cct gtg tat gag tct gta ttc atg gag gat ggg gag aca acc   1056
Thr Met Pro Val Tyr Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr
            340                 345                 350

aga aaa ata gca ctg gag act gag aga cca cct cag gta gag gtc cac   1104
Arg Lys Ile Ala Leu Glu Thr Glu Arg Pro Pro Gln Val Glu Val His
        355                 360                 365
```

```
gtt tgg act att cga aag ggc att ctc cag cac ttc cat att gag aag   1152
Val Trp Thr Ile Arg Lys Gly Ile Leu Gln His Phe His Ile Glu Lys
    370                 375                 380

atc tcc aag agg atg ttt gag gag ctt cct cac ttc aag ctg gtg acc   1200
Ile Ser Lys Arg Met Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr
385                 390                 395                 400

aga aca acc ctg agc cag tgg aag atc ttc acc gaa gga gaa gct cag   1248
Arg Thr Thr Leu Ser Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln
                405                 410                 415

atc agc cag atg tgt tca agt cgt gta tgc aga aca gag ctt gaa gat   1296
Ile Ser Gln Met Cys Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp
            420                 425                 430

tta gtc aag gtt ttg tac ctg gag aga tct gaa aag ggc cac tgt       1341
Leu Val Lys Val Leu Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
        435                 440                 445
```


<210> 26
<211> 447
<212> PRT
<213> Homo sapiens

<400> 26

```
Met Gly Gly Met Lys Tyr Ile Phe Ser Leu Leu Phe Phe Leu Leu Leu
  1               5                  10                  15

Glu Gly Gly Lys Thr Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met
             20                  25                  30

Phe Gln Asp Lys Lys Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu
         35                  40                  45

Glu Pro Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn
     50                  55                  60

Gly Asn Val Leu Cys Ser Arg Val Arg Cys Pro Asn Val His Cys Leu
 65                  70                  75                  80

Ser Pro Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp
                 85                  90                  95

Ser Leu Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr
            100                 105                 110

Asn Gly Thr Thr Tyr Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu
        115                 120                 125

Phe Gln Asn Arg Gln Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu
    130                 135                 140

Gly Asn Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala
145                 150                 155                 160
```

Phe Pro Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp
165 170 175

Gly Glu Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro
180 185 190

Ala Asn Arg Glu Ala Arg His Ser Tyr His Arg Ser His Tyr Asp Pro
195 200 205

Pro Pro Ser Arg Gln Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg
210 215 220

Ser His Arg Gly Ala Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile
225 230 235 240

Val Gln Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val
245 250 255

Ser Asn Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu
260 265 270

Arg Ala Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr
275 280 285

Lys Gln Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys
290 295 300

Tyr Pro Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Glu Glu
305 310 315 320

Leu Pro Gly Gln Ser Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu
325 330 335

Thr Met Pro Val Tyr Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr
340 345 350

Arg Lys Ile Ala Leu Glu Thr Glu Arg Pro Pro Gln Val Glu Val His
355 360 365

Val Trp Thr Ile Arg Lys Gly Ile Leu Gln His Phe His Ile Glu Lys
370 375 380

Ile Ser Lys Arg Met Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr
385 390 395 400

Arg Thr Thr Leu Ser Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln
405 410 415

Ile Ser Gln Met Cys Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp
420 425 430

Leu Val Lys Val Leu Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
435 440 445

<210> 27
<211> 426

<212> PRT
<213> Homo sapiens

<400> 27

```
Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met Phe Gln Asp Lys Lys
  1               5                  10                  15

Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu Glu Pro Tyr Gly Leu
             20                  25                  30

Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn Val Leu Cys
         35                  40                  45

Ser Arg Val Arg Cys Pro Asn Val His Cys Leu Ser Pro Val His Ile
     50                  55                  60

Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp Ser Leu Pro Pro Val
 65                  70                  75                  80

Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly Thr Thr Tyr
                 85                  90                  95

Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu Phe Gln Asn Arg Gln
            100                 105                 110

Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu Gly Asn Val Tyr Cys
        115                 120                 125

Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro Val Ser Val
    130                 135                 140

Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Gly Glu Leu Ser Trp
145                 150                 155                 160

Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn Arg Glu Ala
                165                 170                 175

Arg His Ser Tyr His Arg Ser His Tyr Asp Pro Pro Pro Ser Arg Gln
            180                 185                 190

Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg Ser His Arg Gly Ala
        195                 200                 205

Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln Ile Val Ile
    210                 215                 220

Asn Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn Gly Lys Thr
225                 230                 235                 240

Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala Phe Gly Ile
                245                 250                 255

Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln Glu Cys Lys
            260                 265                 270

Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro Gln Lys Ile
        275                 280                 285
```

```
Asp Gly Lys Cys Cys Lys Val Cys Pro Glu Glu Leu Pro Gly Gln Ser
    290                 295                 300

Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu Thr Met Pro Val Tyr
305                 310                 315                 320

Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr Arg Lys Ile Ala Leu
                325                 330                 335

Glu Thr Glu Arg Pro Pro Gln Val Glu Val His Val Trp Thr Ile Arg
            340                 345                 350

Lys Gly Ile Leu Gln His Phe His Ile Glu Lys Ile Ser Lys Arg Met
        355                 360                 365

Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr Arg Thr Thr Leu Ser
    370                 375                 380

Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln Ile Ser Gln Met Cys
385                 390                 395                 400

Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp Leu Val Lys Val Leu
                405                 410                 415

Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
            420                 425
```

<210> 28
<211> 429
<212> PRT
<213> Homo sapiens

<400> 28

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Gly Lys Thr Glu Gln Val Lys His Ser Glu Thr Tyr Cys Met Phe Gln
  1               5                  10                  15

Asp Lys Lys Tyr Arg Val Gly Glu Arg Trp His Pro Tyr Leu Glu Pro
            20                  25                  30

Tyr Gly Leu Val Tyr Cys Val Asn Cys Ile Cys Ser Glu Asn Gly Asn
        35                  40                  45

Val Leu Cys Ser Arg Val Arg Cys Pro Asn Val His Cys Leu Ser Pro
    50                  55                  60

Val His Ile Pro His Leu Cys Cys Pro Arg Cys Pro Glu Asp Ser Leu
65                  70                  75                  80

Pro Pro Val Asn Asn Lys Val Thr Ser Lys Ser Cys Glu Tyr Asn Gly
                85                  90                  95

Thr Thr Tyr Gln His Gly Glu Leu Phe Val Ala Glu Gly Leu Phe Gln
            100                 105                 110

Asn Arg Gln Pro Asn Gln Cys Thr Gln Cys Ser Cys Ser Glu Gly Asn
```

```
        115                 120                 125

Val Tyr Cys Gly Leu Lys Thr Cys Pro Lys Leu Thr Cys Ala Phe Pro
    130                 135                 140

Val Ser Val Pro Asp Ser Cys Cys Arg Val Cys Arg Gly Asp Gly Glu
145                 150                 155                 160

Leu Ser Trp Glu His Ser Asp Gly Asp Ile Phe Arg Gln Pro Ala Asn
                165                 170                 175

Arg Glu Ala Arg His Ser Tyr His Arg Ser His Tyr Asp Pro Pro Pro
            180                 185                 190

Ser Arg Gln Ala Gly Gly Leu Ser Arg Phe Pro Gly Ala Arg Ser His
        195                 200                 205

Arg Gly Ala Leu Met Asp Ser Gln Gln Ala Ser Gly Thr Ile Val Gln
    210                 215                 220

Ile Val Ile Asn Asn Lys His Lys His Gly Gln Val Cys Val Ser Asn
225                 230                 235                 240

Gly Lys Thr Tyr Ser His Gly Glu Ser Trp His Pro Asn Leu Arg Ala
                245                 250                 255

Phe Gly Ile Val Glu Cys Val Leu Cys Thr Cys Asn Val Thr Lys Gln
            260                 265                 270

Glu Cys Lys Lys Ile His Cys Pro Asn Arg Tyr Pro Cys Lys Tyr Pro
        275                 280                 285

Gln Lys Ile Asp Gly Lys Cys Cys Lys Val Cys Pro Glu Glu Leu Pro
    290                 295                 300

Gly Gln Ser Phe Asp Asn Lys Gly Tyr Phe Cys Gly Glu Glu Thr Met
305                 310                 315                 320

Pro Val Tyr Glu Ser Val Phe Met Glu Asp Gly Glu Thr Thr Arg Lys
                325                 330                 335

Ile Ala Leu Glu Thr Glu Arg Pro Pro Gln Val Glu Val His Val Trp
            340                 345                 350

Thr Ile Arg Lys Gly Ile Leu Gln His Phe His Ile Glu Lys Ile Ser
        355                 360                 365

Lys Arg Met Phe Glu Glu Leu Pro His Phe Lys Leu Val Thr Arg Thr
    370                 375                 380

Thr Leu Ser Gln Trp Lys Ile Phe Thr Glu Gly Glu Ala Gln Ile Ser
385                 390                 395                 400

Gln Met Cys Ser Ser Arg Val Cys Arg Thr Glu Leu Glu Asp Leu Val
                405                 410                 415

Lys Val Leu Tyr Leu Glu Arg Ser Glu Lys Gly His Cys
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420 425

<210> 29
<211> 38
<212> DNA
<213> Homo sapiens

<400> 29
cggaattcgc caccatggga ggcatgaaat acatcttt 38

<210> 30
<211> 33
<212> DNA
<213> Homo sapiens

<400> 30
cgcggatcca cagtggccct tttcagatct ctc 33

<210> 31
<211> 936
<212> PRT
<213> Mus musculus

<400> 31
Thr Gly Pro Glu Pro Pro Ala Leu Pro Ile Arg Ser Glu Lys Glu Pro
1 5 10 15

Leu Pro Val Arg Gly Ala Ala Gly Cys Ser Phe Gly Gly Lys Val Tyr
20 25 30

Ala Leu Asp Glu Thr Trp His Pro Asp Leu Gly Glu Pro Phe Gly Val
35 40 45

Met Arg Cys Val Leu Cys Ala Cys Glu Ala Pro Gln Trp Ala Arg Arg
50 55 60

Gly Arg Gly Pro Gly Arg Val Ser Cys Lys Asn Ile Lys Pro Gln Cys
65 70 75 80

Pro Thr Leu Ala Cys Arg Gln Pro Arg Gln Leu Pro Gly His Cys Cys
85 90 95

Gln Thr Cys Pro Gln Glu Arg Ser Asn Leu Asp Pro Gln Pro Ala Gly
100 105 110

Leu Val Phe Glu Tyr Pro Arg Asp Pro Glu His Arg Ser Tyr Ser Asp
115 120 125

Arg Gly Glu Pro Gly Val Gly Glu Arg Thr Arg Ala Asp Gly His Thr
130 135 140

Asp Phe Val Ala Leu Leu Thr Gly Pro Arg Ser Gln Ala Val Ala Arg
145 150 155 160

```
Ala Arg Val Ser Leu Leu Arg Ser Ser Leu Arg Phe Ser Val Ser Tyr
                165                 170                 175

Gln Arg Leu Asp Arg Pro Ser Arg Val Arg Phe Thr Asp Pro Thr Gly
            180                 185                 190

Asn Ile Leu Phe Glu His Pro Ala Thr Pro Thr Gln Asp Gly Leu Val
        195                 200                 205

Cys Gly Val Trp Arg Ala Val Pro Arg Leu Ser Val Arg Leu Leu Arg
    210                 215                 220

Ala Glu Gln Leu Arg Val Ala Leu Val Thr Ser Thr His Pro Ser Gly
225                 230                 235                 240

Glu Val Trp Gly Pro Leu Ile Trp Gln Gly Ala Leu Ala Ala Glu Thr
                245                 250                 255

Phe Ser Ala Ile Leu Thr Leu Glu Asp Pro Leu Gln Arg Gly Val Gly
            260                 265                 270

Gly Ile Ala Leu Leu Thr Leu Ser Asp Thr Glu Asp Ser Leu His Phe
        275                 280                 285

Leu Leu Leu Phe Arg Gly Leu Leu Gly Gly Leu Ala Gln Ala Pro Leu
    290                 295                 300

Lys Leu Gln Ile Leu His Gln Gly Gln Leu Leu Arg Glu Leu Gln Ala
305                 310                 315                 320

Asn Thr Ser Ala Gln Glu Pro Gly Phe Ala Glu Val Leu Pro Ser Leu
                325                 330                 335

Thr Asp Gln Glu Met Asp Trp Leu Glu Leu Gly Glu Leu Gln Met Val
            340                 345                 350

Leu Glu Lys Ala Gly Gly Pro Glu Leu Arg Ile Ser Gly Tyr Ile Thr
        355                 360                 365

Thr Arg Gln Ser Cys Asp Val Leu Gln Ser Val Leu Cys Gly Ala Asp
    370                 375                 380

Ala Leu Ile Pro Val Gln Thr Gly Ala Ala Gly Ser Ala Ser Phe Ile
385                 390                 395                 400

Leu Leu Gly Asn Gly Ser Leu Ile Tyr Gln Val Gln Val Val Gly Thr
                405                 410                 415

Gly Ser Glu Val Val Ala Met Thr Leu Glu Thr Lys Pro Gln Arg Lys
            420                 425                 430

Asn Gln Arg Thr Val Leu Cys His Met Ala Gly Leu Gln Pro Gly Gly
        435                 440                 445

His Met Ala Val Gly Met Cys Ser Gly Leu Gly Ala Arg Gly Ala His
    450                 455                 460
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Met Leu Leu Gln Asn Glu Leu Phe Leu Asn Val Gly Thr Lys Asp Phe
465                 470                 475                 480

Pro Asp Gly Glu Leu Arg Gly His Val Thr Ala Leu Cys Tyr Ser Gly
                485                 490                 495

His Ser Ala Arg Tyr Asp Arg Leu Pro Val Pro Leu Ala Gly Ala Leu
            500                 505                 510

Val Leu Pro Pro Val Arg Ser Gln Ala Ala Gly His Ala Trp Leu Ser
        515                 520                 525

Leu Asp Thr His Cys His Leu His Tyr Glu Val Leu Leu Ala Gly Leu
    530                 535                 540

Gly Gly Ser Glu Gln Gly Thr Val Thr Ala His Leu Leu Gly Pro Pro
545                 550                 555                 560

Gly Met Pro Gly Pro Gln Arg Leu Leu Lys Gly Phe Tyr Gly Ser Glu
                565                 570                 575

Ala Gln Gly Val Val Lys Asp Leu Glu Pro Val Leu Leu Arg His Leu
            580                 585                 590

Ala Gln Gly Thr Ala Ser Leu Leu Ile Thr Thr Lys Ser Ser Pro Arg
        595                 600                 605

Gly Glu Leu Arg Gly Gln Val His Ile Ala Ser Gln Cys Glu Ala Gly
    610                 615                 620

Gly Leu Arg Leu Ala Ser Glu Gly Val Gln Met Pro Leu Ala Pro Asn
625                 630                 635                 640

Gly Glu Ala Ala Thr Ser Pro Met Leu Pro Ala Gly Pro Gly Pro Glu
                645                 650                 655

Ala Pro Val Pro Ala Lys His Gly Ser Pro Gly Arg Pro Arg Asp Pro
            660                 665                 670

Asn Thr Cys Phe Phe Glu Gly Gln Gln Arg Pro His Gly Ala Arg Trp
        675                 680                 685

Ala Pro Asn Tyr Asp Pro Leu Cys Ser Leu Cys Ile Cys Gln Arg Arg
    690                 695                 700

Thr Val Ile Cys Asp Pro Val Val Cys Pro Pro Pro Ser Cys Pro His
705                 710                 715                 720

Pro Val Gln Ala Leu Asp Gln Cys Cys Pro Val Cys Pro Glu Lys Gln
                725                 730                 735

Arg Ser Arg Asp Leu Pro Ser Leu Pro Asn Leu Glu Pro Gly Glu Gly
            740                 745                 750

Cys Tyr Phe Asp Gly Asp Arg Ser Trp Arg Ala Ala Gly Thr Arg Trp
        755                 760                 765
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His Pro Val Val Pro Pro Phe Gly Leu Ile Lys Cys Ala Val Cys Thr
    770                 775                 780

Cys Lys Gly Ala Thr Gly Glu Val His Cys Glu Lys Val Gln Cys Pro
785                 790                 795                 800

Arg Leu Ala Cys Ala Gln Pro Val Arg Ala Asn Pro Thr Asp Cys Cys
                805                 810                 815

Lys Gln Cys Pro Val Gly Ser Gly Thr Asn Ala Lys Leu Gly Asp Pro
            820                 825                 830

Met Gln Ala Asp Gly Pro Arg Gly Cys Arg Phe Ala Gly Gln Trp Phe
        835                 840                 845

Pro Glu Asn Gln Ser Trp His Pro Ser Val Pro Pro Phe Gly Glu Met
    850                 855                 860

Ser Cys Ile Thr Cys Arg Cys Gly Ala Gly Val Pro His Cys Glu Arg
865                 870                 875                 880

Asp Asp Cys Ser Pro Pro Leu Ser Cys Gly Ser Gly Lys Glu Ser Arg
                885                 890                 895

Cys Cys Ser His Cys Thr Ala Gln Arg Ser Ser Glu Thr Arg Thr Leu
            900                 905                 910

Pro Glu Leu Glu Lys Glu Ala Glu His Ser Val Asp Gly Ser Gly Thr
        915                 920                 925

Asp Tyr Lys Asp Asp Asp Asp Lys
    930                 935
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